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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,536	08/26/2003	Andrew Jeremiah Burns	2003P12748US	5435

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Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

HEINRICH, SAMUEL M

ART UNIT PAPER NUMBER

1725

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/649,536

Applicant(s)

BURNS ET AL.

Examiner

Samuel M. Heinrich

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informality: Page 3, line 27, "Patent 5,9951,892" should be --Patent 5,951,892--. Correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,951,892 to Wolfla et al in view of US Patent Publication 20010037823A1 to Middelmann et al. Wolfla et al disclose laser cutting a gap into an abradable seal material which has been deposited onto a substrate. Wolfa et al disclose numerous seal compositions (column 2, lines 55+) including ceramic insulating materials (column

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3, lines 1-6). Wolfla et al do not describe the particular claimed gap dimension.

Middelmann et al describe well known laser cutting of a gap of 2 to 200 microns. Size is not a patentable feature. Forming of the instant claimed gap dimension with a laser would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because the gap dimension has been well known in the art.

Wolfla et al form a gap which does not extend through the entire thickness of the ceramic. Fiber optic cable laser transmission is well known in the art and its use would have been obvious for transferring the beam to the workpiece. The intended use of the gap as a fluid channel does not impart patentability to the article manufacturing process. The spacing of gaps is a matter of design choice because plural gap forming with a laser in ceramic material has been known in the art for well over a decade.

Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,951,892 to Wolfla et al in view of US Patent Publication 20010037823A1 to Middelmann et al as applied to claim 1 above, and further in view of either USPN 5,441,283 to Pecht et al or in view of SU1719756A1. Pecht et al disclose (description of Figures 5 and 6 [DETX 23]) forming grooves and having variation in groove depths. SU1719756A1 describes (Title) a turbine shaft seal ring with grooves of different depths. The formation of different depth grooves in Wolfla et al in view of Middelmann et al would have been obvious at the time applicant's invention was made depending on the intended operation of the seal.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,951,892 to Wolfla et al in view of US Patent Publication 20010037823A1 to

Middelman et al as applied to claim 1 above, and further in view of USPN 6,034,348 to Kim et al. Kim et al disclose well known micro etching using a beam transmitted by optical fiber. The use of fiber beam transmission in a method of etching an insulated component would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because the fiber transmission provides small and accurate beam transmission.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolfla et al in view of Middelman et al as applied to claim 1 above, and further in view of USPN 4,684,780 to Cantello et al. Cantello et al disclose a well known lens. The use of a particular lens spacing would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because the lens location isolates it from the workpiece and protects it.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,951,892 to Wolfla et al in view of US Patent Publication 20010037823A1 to Middelman et al as applied to claim 1 above, and further in view of Applicant's Admitted Prior art such as USPN 5,352,540 to Schienle et al. With respect to (WRT) claims 16 and 17, Schienle et al disclose (column 3, lines 9-14) forming grooved layers in order to enhance adhesion of subsequent layers and disclose (column 4, lines 25 and 26) a seal having grooves formed in a surface layer. Forming first and second grooved layers would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art depending on the degree of build up desired for building a seal and including a coating system containing segmenting grooves in the surface layer,

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or depending on whether a first grooved layer is being rebuilt with a second top layer which requires grooves.

***Allowable Subject Matter***

Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed January 30, 2006 have been fully considered but they are not persuasive.

Applicant argues Wolfla et al do not disclose cutting ceramic material and that a closer reading of the '089 patent (referenced in Wolfla et al) does not provide cutting a ceramic material. This argument is not convincing. Wolfla et al describe (column 3, lines 1-6) examples of abradable seal material and the examples include oxides, nitrides, borides, intermetallics, non metallics, etc., and these descriptions are examples of ceramic insulating materials. Further, applicant's claim language is a method "comprising ... a layer of ceramic material on the substrate" and does not preclude a mixture of ceramic powder with other materials.

Applicant's arguments with respect to claims 6-10 have been considered but are moot in view of the new ground(s) of rejection.

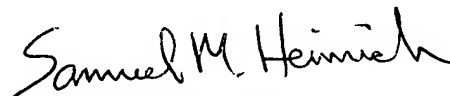
***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel M. Heinrich whose telephone number is 571-272-1175. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Samuel M Heinrich  
Primary Examiner  
Art Unit 1725

SMH